

**IN THE SPECIFICATION<sup>1</sup>**

Please change the paragraph on page 12, lines 14-18 to read as follows:

B<sup>1</sup>  
In the present invention, a mixture of a starting alkyl cellulose derivative and water, in which the amount of water is 5 to 2,000 parts by weight on the basis of 100 parts by weight of the alkyl cellulose derivative, is irradiated with radioactive rays.

**IN THE CLAIMS**

Please amend the pending claims herein as follows:<sup>2</sup>

1. (Amended) A process for producing a self-cross-linked alkyl cellulose, which comprises irradiating, with radioactive rays, a mixture of 100 parts by weight of an alkyl cellulose wherein the alkyl group has 1 to 3 carbon atoms, and may be substituted by a hydroxyl group or a carboxyl group, and wherein the carboxyl group may be in the form of a salt, and 5 to 2,000 parts by weight of water.

B<sup>2</sup>  
2. (Amended) A process for producing a self-cross-linked alkyl cellulose, according to claim 1, wherein the alkyl cellulose is carboxyalkyl cellulose, hydroxyalkyl cellulose, or alkyl cellulose, having at least one hydroxyl group or carboxyl group per glucose unit of a mixture of these celluloses.

3. (Amended) A process for producing a self-cross-linked alkyl cellulose, according to claim 1, wherein 20% or more of the entirety of carboxyl groups of the alkyl cellulose is in the form of an alkali metal salt, an ammonium salt, or an amine salt.

<sup>1</sup> Pursuant to Rule 121(b), a marked-up version of the affected specification paragraph(s) appears in Appendix I hereto and shows all changes by underlining added language and bracketing deleted language.

<sup>2</sup> Pursuant to Rule 121(c), a marked-up version of the amended claims appears in Appendix II hereto and shows all changes by underlining added language and bracketing deleted language.

4. (Amended) A process for producing a self-cross-linked alkyl cellulose, according to claim 2, wherein the alkyl cellulose has an average polymerization degree of 10 to 2,000 and an average etherification degree of 0.5 or more.

5. (Amended) A process for producing a self-cross-linked alkyl cellulose, according to claim 1, wherein the self-cross-linking alkyl cellulose has a gel fraction of 0.1% or more.

6. (Amended) A process for producing a self-cross-linked alkyl cellulose, according to claim 1, wherein the dose of radioactive rays is 0.1 kGy or more.

7. (Amended) A process for producing a self-cross-linked alkyl cellulose, according to claim 1, which further comprises drying the self-cross-linked cellulose.

8. (Amended) A self-cross-linked alkyl cellulose, produced by process according to any one of claims 1-7.

9. (Amended) A self-cross-linked alkyl cellulose according to claim 8, wherein, when 0.2 g of the dried self-cross-linked alkyl cellulose is added to 10 ml of a buffered aqueous acetic acid solution having a pH of 4.5 containing 0.5 wt.% of cellulase and the resultant solution is allowed to stand at 40°C for eight hours, the percent biodegradation of the self-cross-linked alkyl cellulose is 50% or more.

10. (Amended) A self-cross-linked alkyl cellulose according to claim 9, wherein the percent biodegradation is 70% or more.

11. (Amended) A self-cross-linked alkyl cellulose according to claim 8, wherein the self-cross-linked alkyl cellulose absorbs 30 times or more its weight of distilled water.

12. (Amended) A self-cross-linked alkyl cellulose according to claim 8, in the form of a gel having a compressive strength of 100 g/cm<sup>2</sup> or more.

Please cancel claims 13 and 14 and, in their stead, add the following new claim:

15. (NEW) A product which comprises a self-cross-linked alkyl cellulose as in claim 8.

[Please add the following new claims:]

16. (NEW) A process for producing a self-cross-linked alkyl cellulose, which comprises irradiating, with radioactive rays, a mixture of 100 parts by weight of an alkyl cellulose wherein the alkyl group has 1 to 3 carbon atoms, and may be substituted by a hydroxyl group or a carboxyl group, and wherein the carboxyl group may be in the form of a salt, and 5 to 2,000 parts by weight of water so as to produce a self-cross-linked alkyl cellulose having a gel fraction of 0.1 to 30%, wherein the self-cross-linked alkyl cellulose, after drying, absorbs 20 times or more its weight in water.

17. (NEW) A process for producing a self-cross-linked alkyl cellulose, which comprises irradiating, with radioactive rays, a mixture of 100 parts by weight of an alkyl cellulose wherein the alkyl group has 1 to 3 carbon atoms, and may be substituted by a hydroxyl group or a carboxyl group, and wherein the carboxyl group may be in the form of a salt, and 5 to 2,000 parts by weight of water so as to produce a self-cross-linked alkyl cellulose having a gel fraction of 30% or more and a compressive strength of 100 g/cm<sup>2</sup> or more.

18. (NEW) A process according to claim 16 or 17, wherein the alkyl cellulose is carboxyalkyl cellulose, hydroxyalkyl cellulose, or alkyl cellulose, having at least one hydroxyl group or carboxyl group per glucose unit of a mixture of these celluloses.

19. (NEW) A process according to claim 16 or 17, wherein 20% or more of the entirety of carboxyl groups of the alkyl cellulose is in the form of an alkali metal salt, an ammonium salt, or an amine salt.

20. (NEW) A process according to claim 16 or 17, wherein the alkyl cellulose has an average polymerization degree of 10 to 2,000 and an average etherification degree of 0.5 or more.

21. (NEW) A process according to claim 16 or 17, wherein the self-cross-linked alkyl cellulose has a gel fraction of 0.1% or more.

22. (NEW) A self-cross-linked alkyl cellulose, produced by process according to claim 16.

23. (NEW) A self-cross-linked alkyl cellulose according to claim 22, wherein, when 0.2 g of the dried self-cross-linked alkyl cellulose is added to 10 ml of a buffered aqueous acetic acid solution having a pH of 4.5 containing 0.5 wt.% of cellulase and the resultant solution is allowed to stand at 40°C for eight hours, the percent biodegradation of the self-cross-linked alkyl cellulose is 70% or more.

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24. (NEW) A medical product, a cosmetic product, a sanitary product, or an agricultural water-retention product, comprising a self-cross-linked alkyl cellulose according to claims 22 or 23.

25. (NEW) A self-cross-linked alkyl cellulose, produced by process according to claim 17.

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26. (NEW) A self-cross-linked alkyl cellulose according to claim 25, wherein, when 0.2 g of the dried self-cross-linked alkyl cellulose is added to 10 ml of a buffered aqueous acetic acid solution having a pH of 4.5 containing 0.5 wt.% of cellulase and the resultant solution is allowed to stand at 40°C for eight hours, the percent biodegradation of the self-cross-linked alkyl cellulose is 50% or more.

27. (NEW) A chromatography carrier, an industrial material, or a soil additive, comprising a self-cross-linked alkyl cellulose according to claim 25 or 26.

#### REMARKS

Favorable reconsideration and allowance of this application are requested.

At the outset, there is attached hereto under Tab A is a revised form which lists references previously submitted along with their respective publication dates.